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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.           | CONFIRMATION NO. |
|--|-------------|----------------------|-------------------------------|------------------|
| 10/533,006   | 04/28/2005  | Hideki Moriyama      | BAN-05-1097                   | 1709             |
| 35811 7590 03/23/2007<br>IP GROUP OF DLA PIPER US LLP<br>ONE LIBERTY PLACE<br>1650 MARKET ST, SUITE 4900<br>PHILADELPHIA, PA 19103 |             |                      | EXAMINER<br>LISTVOYB, GREGORY |                  |
|  |             |                      | ART UNIT                      | PAPER NUMBER     |
|  |             |                      | 1711                          |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE   |             | MAIL DATE            | DELIVERY MODE                 |                  |
| 3 MONTHS   |             | 03/23/2007           | PAPER                         |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/533,006 | <b>Applicant(s)</b><br>MORIYAMA ET AL. |  |
|                              | <b>Examiner</b><br>Gregory Listvoyb  | <b>Art Unit</b><br>1711                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-55 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/28/05</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10, 22, rejected under 35 U.S.C. 102(b) as being anticipated by Nemoto et al (Chem. Mater., 8(7) 1527-1534), herein Nemoto.

Nemoto discloses a polyamide having aromatic groups, exhibiting a light transmittance of 80% or more for all lights with wavelengths from 400-700 nm (Abstract, Figure 3). The light transmittance with wavelength of 350 nm is more than 30% (Figure 3). Glass transition temperature is within the range 157-167C (Table 1).

Claims 1-3, 5-6, 10-39, 41, 42, 47, 48, 50, 51 rejected under 35 U.S.C. 102(b) as being anticipated by Hitoshi et al (JP Publication 2000-190385), herein Hitoshi.

Hitoshi discloses an optical film used as a substrate for LCD display (Abstract) and lens (line 0085), based on aromatic polyamide (Formula 1, line 0025). Diamines and diacids, represented by Formula 3 and 4 meet the limitations of Claims 1, 6, 22-23, 35, 37, and 47. In a preferred embodiment, the polyamide has a structure, identical to structure (III) in Claim 6. Since the above structure identical to one in the Application's Specification and claim 10, it meet the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 1- 3, 10, 12- 15, 22, 23, 25, 26, 27, 28, 35, 36 - 39 .

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Hitoshi teaches that above polyamide film has a refractive index higher than 1.6 (Table 1), meeting the limitations of Claims 5, 16 and 29.

Regarding Claims 11 and 24, the film thickness is within the range of 0.2-100 microns (line 0061).

Regarding Claim 17-18,20-21, 30-31, 33-34. Hitoshi teaches that a retardation value is within the range 2nm-213 nm with birefringency less than 00.2 (line 0103).

Hitoshi's film uses in LCD laminated compositions as light retardation (anti-reflectant) film, meeting the limitations of Claims 41, 42, 50 and 51.

Since the structure of Hitoshi's films is identical to the one in Claim 6 of the Application, it inherently possesses retardation of light ratio at different wavelengths (550 nm vs 450 nm), meeting the limitations of Claims 19 and 32.

Claims 1-3, 5-6, 10-39, 41, 42, 47, 48, 50, 51 rejected under 35 U.S.C. 102(b) as being anticipated by Harris et al (US Patent <sup>5580950</sup> ~~55580950~~ <sub>h</sub>), herein Harris.

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Harris discloses a polyamide, applied as an optical member in LCD displays. The structural formulas (I), (II), (III) and (IV) (Columns 5 and 6), meet the limitations of Claims 6.

Since the above structure identical to one in the Application's Specification, it meet the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 1, 2, 3, 10, 12- 15, 25- 28, 35- 39 .

Claims 1-3, 6, 10-15, 22-23, 25-28, 35-39 and 47-48 rejected under 35 U.S.C. 102(e) as being anticipated by Yamaoka et al (US Publication 2004/0100599), herein Yamaoka.

Yamaoka teaches a method for producing a polyamide, applied as an optical member in LCD displays. Structure 22 and preferred structure 23 meet the limitations of Claims 1, 6, 22, 23, 35, 37, 47.

Since the above structure identical to one in the Application's Specification, it meet the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 2, 3, 10, 12- 15, 25- 28, 35- 39 .

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Thickness of polyamide layer is within the range of 11 to 30 microns, meeting the limitations of Claims 11 and 24.

Claims 1-3, 6, 10-15, 22-23, 25-28, 35-39 and 47-48 rejected under 35 U.S.C. 102(b) as being anticipated by Murakami et al (US Patent 7054049), herein Murakami.

Murakami teaches a transparent optical film for LCD display that has excellent optical characteristics for realizing the uniform retardation distribution (Abstract).

Murakami discloses a polyamide structure, which meets the limitations of Claims 1, 6, 22-23, 35, 37 and 47-48 (Column 13, Formula 22 and 23).

Most preferable film thickness is within the range of 5 to 150 microns (Column 20, line 50), meeting the limitations of Claims 11 and 24

The retardation value of the film is within the range  $-90$  nm to  $75$  nm, meeting the limitations of Claims 17-18 and 30-31.

Since the above structure identical to one in the Application's Specification 10, it meet the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 2, 3, 10, 12- 15, 25- 28, 35- 39 .

Claims 6, 9, 11-14, 20-24, 27, 35, 37 and 47-48 rejected under 35 U.S.C. 102(b) as being anticipated by Handa et al et al (US Patent 6589663), herein Handa.

Regarding Claims 6, 9-14, 17-18, 20-21 Handa discloses an aromatic polyamide film, structure of which meets the limitations of Claim 6 and 9, having Young modulus within 6000 –40000 N/mm<sup>2</sup> (6 -40 Gpa) (Column 21, Claim 5), thickness of 4-6 microns (Column 21, Table 3) and surface roughness (light retardation) within 0.5-25 (Column 21, Claim 4).

Regarding Claims 20 and 21 Panda discloses the birefringence values for an biaxially oriented film. He expresses birefringence as a Plane orientation coefficient equal to average of birefringence in Machine and Tangential directions (MD and TD). (Column 13, line 30). Planar orientation coefficient varies from 0.11 to 0.6 (Table 3 and Claim 4, Column 21). In examiner's opinion, birefringence in both directions are not equal, since the film is oriented unequally in MD and TD directions. Therefore, for Comparative example 4 (Table 3), which have planar orientation coefficient of 0.11, birefringence in TD direction is less than 0.1. Therefore, limitations of Claims 20 and 21 are met.

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Claims 6- 9, 22-23 rejected under 35 U.S.C. 102(b) as being anticipated by Elfert et al (US Patent 4217227), herein Elfert.

Elfert discloses a copolyamide films with variety of structures.

Regarding Claim 7, Elfert teaches copolyamide, comprising structures I and IV, whereas both components can be present at the ratio between 10 to 90 mol %, preferably 15 to 50 mol%. (Columns 2 and 3, structures I and IV, Claim 1).

Regarding Claim 8, Elfert teaches copolyamide, comprising structures I I and IV, whereas both components can be present at the ratio between 10 to 90 mol %, preferably 15 to 50 mol%. (Columns 2 and 3, structures I and II, Claim 1).

Regarding Claim 9, Elfert teaches copolyamide, comprising structures I I and IV, whereas both components can be present at the ratio between 10 to 90 mol %, preferably 15 to 50 mol%. (Columns 2 and 3, structures I and II, Claim 1).

Claims 6-7, 9, 14, 27 rejected under 35 U.S.C. 102(b) as being anticipated by Tsukuda et al (US Patent 6274220), herein Tsukuda.

Tsukuda teaches copolyamides with Young Modulus of 9.8 GPa and above (Column 4, line 20), having structures, meeting the limitations of Claims 7 and 9 (Columns 8 and 9, Example 1).



***Claim Rejections - 35 USC § 103***

Claims 6, 22, 23, 35, 37, 47, 45, 54, 40, 49, 53 rejected under 35 U.S.C. 103(a) as being unpatentable over Harris in combination with Vargo et al (US patent 6232386) herein Vargo.

Harris discloses a polyamide, applied as an optical member in LCD displays. The structural formulas (I), (II), (III) and (IV) (Columns 5 and 6), meet the limitations of Claims 6 and 47.

Harris does not disclose the use of his polyamide as part of solar batteries, optical fibers and optical waveguides.

Vargo teaches polymer composites used as an optical element in (Column 15, line 5). The above compositions include polyamides.

It would be obvious to a person with ordinary skills in the art to use Harris's polymer as an optical element in above applications, since the polyamide possesses required optical characteristics.

Claims 6, 47, 52 and 55 rejected under 35 U.S.C. 103(a) as being unpatentable over Harris in combination with Hawa et al (US publication 2003/0116270) herein Hawa.

Harris discloses a polyamide, applied as an optical member in LCD displays. The structural formulas (I), (II), (III) and (IV) (Columns 5 and 6), meet the limitations of Claims 6 and 47.

Harris does not disclose the use of his polyamide as part of a touch panel and a lense.

Hawa teaches a polyamide antireflection film for use with LCD displays, lenses and touch screens (page 1, line 003).

It would be obvious to a person with ordinary skills in the art to use Harris's polymer as an optical element in above applications, since the polyamide possesses required optical characteristics.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Listvoyb  
Examiner  
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